



**Turnaround improvement programs require a qualified partner who not only has a complete range of expertise but experienced consultants who can be where they're required, whenever they're required.**

***Turn to us.***

## **Our Approach to Conducting Effective Turnarounds (T/As)**

### **Assess T/A Planning and Execution Effectiveness**

- ▮ Define parameters to measure T/A performance
- ▮ Identify organizational barriers that exist
- ▮ Establish the incentives for change
- ▮ Pinpoint the procedures that need to be upgraded

### **Benchmark the Competition**

- ▮ Cost and schedule indices
- ▮ Run length predictability
- ▮ T/A planning milestones
- ▮ Accuracy in predicting work to be done
- ▮ Critical path optimization

### **Establish Improvement Objectives**

- ▮ Develop a T/A milestone plan consistent with Pacesetter practices
- ▮ Define the organizational and procedural improvements required
- ▮ Set up an action plan to implement T/A planning improvements
- ▮ Conduct follow-up reviews to assess implementation of changes

*All the right people in all the right places.™*

**CARMAGEN**  
Engineering, Inc.



### **Carmagen Engineering, Inc. Assistance**

Conduct an initial assessment of the client's current T/A effectiveness. This would consist of a one to two-week visit by two or three of our consultants.

- 🏗️ Estimate the competitive position
- 🏗️ Review critical organizational procedures. This includes:
  - ⇒ Management role
  - ⇒ Plant monitoring: inspection and process performance
  - ⇒ T/A planning procedures
  - ⇒ Budgeting and work progress assessment
- 🏗️ Define preliminary opportunities for improvement
- 🏗️ Identify highest pay-out organizational and procedural changes

Work with the client's personnel to develop improvement plans.

- 🏗️ Action steps to improve procedures
- 🏗️ Timing and resources needed
- 🏗️ Training needs

Subsequently, we assist with implementation of selected improvements, such as:

- 🏗️ Communication and team building
- 🏗️ Redefining roles/responsibilities
- 🏗️ Developing improved procedures
  - ⇒ Budgeting
  - ⇒ T/A milestone plan
  - ⇒ Planning tools
  - ⇒ Critical path development



Alternatively, Carmagen Engineering, Inc. works with the client's organization in applying the principles of T/A Excellence to a specific T/A. At critical stages during T/A preparation, we work with client personnel to implement improvements. We recommend the following series of consulting visits:

- 🏗️ 15 months prior to the T/A – establish the T/A planning objectives
  - ⇒ Two day visit by one of our consultants to interview key management and T/A planning personnel
  - ⇒ Define the major work item that requires the shutdown
  - ⇒ Set the expectations on duration and cost for the T/A
  - ⇒ Define the margin cost for each day of lost production
  - ⇒ Establish the run length and reliability objectives for the ensuing run
- 🏗️ Work list review – justify the major work activities of the T/A plan
  - ⇒ One week visit by two or three of our consultants, depending on the nature of the unit and work anticipated – 12 months prior to the T/A
  - ⇒ Review reason for each work activity
  - ⇒ Establish the cost and benefit for work requests
  - ⇒ Conduct justification reviews
  - ⇒ Define work which can be eliminated from the T/A
  - ⇒ Preparation work required by the client
    - ~ Preliminary T/A cost estimate
    - ~ Identify the personnel responsible for finalizing the work list
    - ~ Organization charts for the refinery and the T/A Planning Team
    - ~ Consolidated preliminary work lists for the units involved
    - ~ Summary of the prior inspection findings for the equipment
    - ~ P&IDs showing blocks and by-passes
  - ⇒ Preliminary review schedule with operations, inspection, and process technical service personnel



- 🏗️ Work planning review – Analyze the quality of the planning preparation
  - ⇒ One week visit by two or three of our consultants – six months prior to the T/A
  - ⇒ Assess the critical path work execution plan
  - ⇒ Review the T/A execution organization
  - ⇒ Evaluate the contracting approach
  - ⇒ Review the plans for executing the work in a safe manner
  - ⇒ Review materials procurement
  - ⇒ Preparation work required by the client
    - ~ T/A Budget
    - ~ Expected Oil-out to Oil-in schedule
    - ~ Define work and shift schedules to be used during the T/A
    - ~ Prepare preliminary Gantt charts for critical/sub-critical activities
    - ~ Summary of the contract development and bid status
    - ~ Define critical crane lists
    - ~ Plans for evaluating work risks
    - ~ Summary of delivery on critical materials
    - ~ T/A communication plan

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